10-8-1979

Test 1327: John Deere 1050 Diesel 8-Speed

Tractor Museum
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NEBRASKA TRACTOR TEST 1327 — JOHN DEERE 1050 DIESEL 8 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—574 rpm)								
33.41 (24.91)	2400	2.206 (8.351)	0.464 (0.282)	15.14 (2.983)	211 (99.6)	52 (11.2)	75 (23.8)	29.203 (98.615)
Standard Power Take-off Speed (540 rpm)—One Hour								
33.42 (24.92)	2258	2.161 (8.181)	0.454 (0.276)	15.46 (3.046)	216 (102.1)	52 (11.1)	75 (24.0)	29.180 (98.536)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
29.43 (21.95)	2488	2.005 (7.588)	0.478 (0.291)	14.68 (2.892)	205 (96.1)	52 (11.1)	76 (24.2)	....
0.00 (0.00)	2584	0.645 (2.433)	....	....	166 (74.4)	52 (10.8)	76 (24.2)	....
15.09 (11.25)	2550	1.282 (4.854)	0.597 (0.363)	11.77 (2.318)	177 (80.6)	52 (11.1)	76 (24.4)	....
33.29 (24.83)	2400	2.223 (8.413)	0.469 (0.285)	14.98 (2.951)	211 (99.4)	52 (11.1)	76 (24.2)	....
7.60 (5.67)	2569	0.936 (3.543)	0.865 (0.526)	8.12 (1.599)	169 (76.1)	52 (10.8)	75 (23.9)	....
22.33 (16.65)	2516	1.628 (6.164)	0.512 (0.311)	13.72 (2.702)	188 (86.7)	52 (11.1)	75 (23.9)	....
Av 17.96	**2518**	**1.453**	**0.568**	**12.36**	**186**	**52**	**75**	**29.167**
Av (13.39)		***(5.501)***	***(0.346)***	***(2.434)***	***(85.6)***	***(11.0)***	***(24.1)***	***(98.491)***

DRAWBAR PERFORMANCE
(Front Wheel Drive Disengaged)

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 6th Gear											
27.25 (20.32)	1938 (8.62)	5.27 (8.49)	2398	6.40	2.208 (8.359)	0.569 (0.346)	12.34 (2.431)	208 (97.5)	51 (10.3)	68 (19.7)	28.565 (96.460)
75% of Pull at Maximum Power—Ten Hours 6th Gear											
22.46 (16.75)	1498 (6.66)	5.62 (9.05)	2504	4.51	1.873 (7.092)	0.586 (0.356)	11.99 (2.361)	197 (91.5)	57 (13.8)	71 (21.8)	28.568 (96.470)
50% of Pull at Maximum Power—Two Hours 6th Gear											
15.33 (11.43)	997 (4.43)	5.77 (9.28)	2538	3.27	1.514 (5.730)	0.693 (0.422)	10.13 (1.995)	169 (75.8)	45 (7.2)	52 (11.1)	28.820 (97.321)
50% of Pull at Reduced Engine Speed—Two Hours 7th Gear											
15.39 (11.48)	999 (4.44)	5.78 (9.30)	1717	3.18	1.247 (4.719)	0.569 (0.346)	12.35 (2.432)	169 (76.1)	43 (6.1)	51 (10.6)	28.870 (97.490)
MAXIMUM POWER IN SELECTED GEARS											
21.50 (16.03)	3466 (15.42)	2.33 (3.74)	2506	14.96		4th Gear		173 (78.3)	43 (6.1)	49 (9.4)	28.790 (97.220)
27.40 (20.43)	2906 (12.93)	3.54 (5.69)	2400	10.56		5th Gear		205 (96.1)	49 (9.4)	64 (17.8)	28.630 (96.679)
28.15 (20.99)	2002 (8.91)	5.27 (8.49)	2401	6.51		6th Gear		205 (95.8)	47 (8.3)	61 (16.1)	28.690 (96.882)
27.76 (20.70)	1302 (5.79)	7.99 (12.87)	2401	4.14		7th Gear		205 (95.8)	49 (9.4)	65 (18.3)	28.600 (96.578)

LUGGING ABILITY IN 6th GEAR

Crankshaft Speed rpm	2401	2154	1919	1678	1428	1200
Pull—lbs (kN)	2002 (8.91)	2296 (10.21)	2487 (11.06)	2510 (11.17)	2384 (10.60)	2215 (9.85)
Increase in Pull %	0	15	24	25	19	11
Power—Hp (kW)	28.15 (20.99)	28.60 (21.33)	27.37 (20.41)	24.13 (18.00)	19.60 (14.62)	15.43 (11.50)
Speed—Mph (km/h)	5.27 (8.49)	4.67 (7.52)	4.13 (6.64)	3.61 (5.80)	3.08 (4.96)	2.61 (4.20)
Slip %	6.51	7.81	8.45	8.66	8.03	7.49

Department of Agricultural Engineering

Dates of Test: October 8-12, 1979

Manufacturer: YANMAR DIESEL CO. LTD., Osaka, Japan

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 49.0 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°60° *(15°/15°)*** 0.8430 **Fuel weight** 7.019 lbs/gal *(0.841 kg/l)* **Oil SAE** 30 **API service classification** SD-CC/CD **To motor** 1.551 gal *(5.870 l)* **Drained from motor** 1.490 gal *(5.640 l)* **Transmission and final drive lubricant** John Deere Hy Gard **Total time engine was operated** 37.0 hours.

ENGINE: Make Yanmar Diesel **Type** three cylinder vertical with turbocharger **Serial No.** 3T90TJ80156 **Crankshaft** lengthwise **Rated rpm** 2400 **Bore and stroke** 3.54″ x 3.54″ *(90 mm x 90 mm)* **Compression ratio** 20.4 to 1 **Displacement** 105 cu in *(1717 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one paper cartridge **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type Four-wheel drive **Serial No.** 1050S-001772 **Tread width** rear 51″ *(1300 mm)* to 75″ *(1900 mm)* front 49″ *(1250 mm)* **Wheel base** 69″ *(1750 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 28.9″ *(735 mm)* Vertical distance above roadway 28.4″ *(720 mm)* Horizontal distance from center of rear wheel tread 0″ *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Advertised speeds mph *(km/h)*** first 0.9 *(1.4)* second 1.2 *(2.0)* third 1.8 *(2.9)* fourth 2.7 *(4.3)* fifth 4.0 *(6.5)* sixth 5.7 *(9.2)* seventh 8.5 *(13.6)* eighth 12.5 *(20.1)* reverse 1.2 *(2.0)*, 5.7 *(9.2)* **Clutch** single dry disc operated by foot pedal **Brakes** internal expanding shoe operated by two foot pedals which can be locked together **Steering** mechanical **Turning radius** (on concrete surface with brake applied) right 100.4″ *(2.55 m)* left 100.4″ *(2.55 m)* (on concrete surface without brake) right 108.3″ *(2.75 m)* left 108.7″ *(2.76 m)* **Turning space diameter** (on concrete surface with brake applied) right 207.8″ *(5.28 m)* left 207.8″ *(5.28 m)* (on concrete surface without brake) right 223.6″ *(5.68 m)* left 224.4″ *(5.70 m)* **Power take-off** 540 rpm at 2258 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump was 135°F *(57.3°C)*. Four gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

TRACTOR SOUND LEVEL WITHOUT CAB	dB(A)	Front Wheel Drive Disengaged dB(A)
Maximum Available Power—Two Hours	90.0	89.0
75% of Pull at Maximum Power—Ten Hours	—	89.5
50% of Pull at Maximum Power—Two Hours	—	89.0
50% of Pull at Reduced Engine Speed—Two Hours	—	86.5
Bystander in 8th gear	—	79.5

DRAWBAR PERFORMANCE
(Front Wheel Drive Engaged)

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp. °F *(°C)* Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Available Power—Two Hours 6th Gear											
27.31 *(20.37)*	1887 *(8.39)*	5.43 *(8.74)*	2401	4.76	2.173 *(8.224)*	0.558 *(0.340)*	12.57 *(2.476)*	208 *(97.8)*	52 *(11.1)*	69 *(20.6)*	28.495 *(96.223)*
MAXIMUM POWER IN SELECTED GEARS											
25.03 *(18.66)*	4033 *(17.94)*	2.33 *(3.74)*	2475	14.77	4th Gear			184 *(84.2)*	43 *(6.1)*	49 *(9.4)*	28.790 *(97.220)*
28.49 *(21.25)*	1973 *(8.78)*	5.42 *(8.72)*	2400	4.99	6th Gear			206 *(96.4)*	49 *(9.4)*	64 *(17.8)*	28.660 *(96.781)*

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Two 13.6-28; 4; 14 *(95)*	Two 13.6-28; 4; 14 *(95)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	315 lb *(143 kg)*	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 7-16; 4; 22 *(150)*	Two 7-16; 4; 22 *(150)*
Ballast	—Liquid (each)	None	None
	—Cast Iron (each)	50 lb *(23 kg)*	None
Height of Drawbar		16 in *(405 mm)*	16 in *(405 mm)*
Static Weight with Operator—Rear		2680 lb *(1216 kg)*	2050 lb *(930 kg)*
—Front		1460 lb *(662 kg)*	1360 lb *(617 kg)*
—Total		4140 lb *(1878 kg)*	3410 lb *(1547 kg)*

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1327.**

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Engineer-in-Charge

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John Deere 1050 Diesel

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